SERVICE MANUAL

LFT5508

Issue 3

VIACLIN

Alternating Pressure Mattress Overlay

Model 2502

LFT5508 - AMENDMENT RECORD

REVISION	CHANGE NOTE	TECH. NOTE	BRIEF DETAILS	SIGNATURE	DATE
1					
2					
3	025/02	011/02	To have a common flow restrictor assembly for 2503 & 5202	K.Wilson	3/9/02
	023/02	-	Replace part number MEC483 with MEC14753	K.Wilson	16/9/02
	-	-	Redrawn instruction diagrams to show overlay straps around mattress.	K.Wilson	3/10/02
	-	-	Reformated Viaclin service manual 2502 so that it is similar in structure as the newer manuals. Changed text '5.5 ltr/min' to '6.5 ltr/min'. Added note"EXISTING 2501 OR 2502 THAT REQUIRE A REPLACEMENT POWERUNIT WILL BE REPLACED BY A 2503 POWER UNIT (SA242) AND AN APPROPRIATE ADAPTER (REF: MOD KIT MOD14831)". See IU 088/02	K.Wilson	22/10/02

POLICY STATEMENT

Pegasus Ltd has a policy of continuous product improvement and reserves the right to change details presented in this Service Manual without notice.

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SECTION 1 - SAFETY STATEMENT

1.1. The **VIACLIN** system must be used in accordance with the manufacturer's instructions.

1.2. The mains electricity supply within the building where the VIACLIN system is to be used must comply with IEE Regulations.

1.3. Only personnel trained or formally approved by Pegasus Ltd in operation and maintenance of Pegasus systems may perform maintenance, modification or repair work on Pegasus Ltd Power Control Units.

1.4. Unqualified personnel attempting to work on Pegasus Ltd Power Control Units risk serious injury to themselves and others, and possibly death by electrocution.

Do not work, or attempt to work on Pegasus Power Units unless you are properly qualified to do so.

1.5. Pegasus Ltd systems are designed to comply with all relevant electrical safety, manufacturing and performance standards published by IS0, IEE & BSI.

1.6 Materials used for cleaning procedures may be subject to COSHH regulations - manufacturer's Instructions for Use must be followed at all times.

1.7 Materials used for maintenance and repair may be subject to COSHH regulations - manufacturer's Instructions for Use must be followed at all times.

SECTION 2 - INTRODUCTION

2.1 GENERAL

The **VIACLIN** Alternating Pressure Mattress Overlay is designed for use whenever patients have some mobility problems and/or who are vulnerable to pressure ulcer development and/or who have existing tissue damage. It gives gentle, dynamic support to bedridden and immobile people in recumbent, supine and knee-break postures, providing alternatively support then pressure relief to each part of the underside of the patient.

The bed can be repositioned whilst the Mattress Overlay is still inflated.

The system is suitable for use in hospitals, nursing homes and in the community.

2.2 SYSTEM DESCRIPTION

The system consists of a power unit and a mattress overlay. Audio and visual alarms activate if a fault condition exists for more than three minutes (compressor failure, overlay or airpipe failure). An audio alarm sounds if the mains supply fails (disconnected or switched off). These alarms alerts medical staff to the malfunction.

The specially constructed overlay comprises a series of pairs of transverse cells, which are inflated and deflated alternately. Air to inflate the overlay is provided by an electronically controlled power unit. The air pressure in the overlay is continuously monitored, and the system is completely self-regulating. The overlay is connected to the power unit by means of an airpipe which features quick release connections at the power unit end, for convenience and rapid deflation, to allow cardiac resuscitation procedures. Operator controls are purposely kept to a minimum.

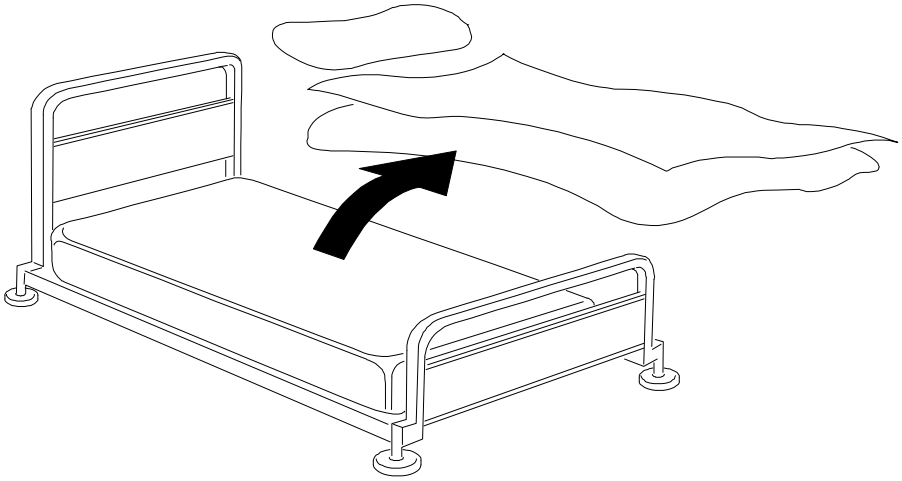
The overlay is positioned on top of the normal bed mattress.

SECTION 3 - SETTING UP/OPERATION

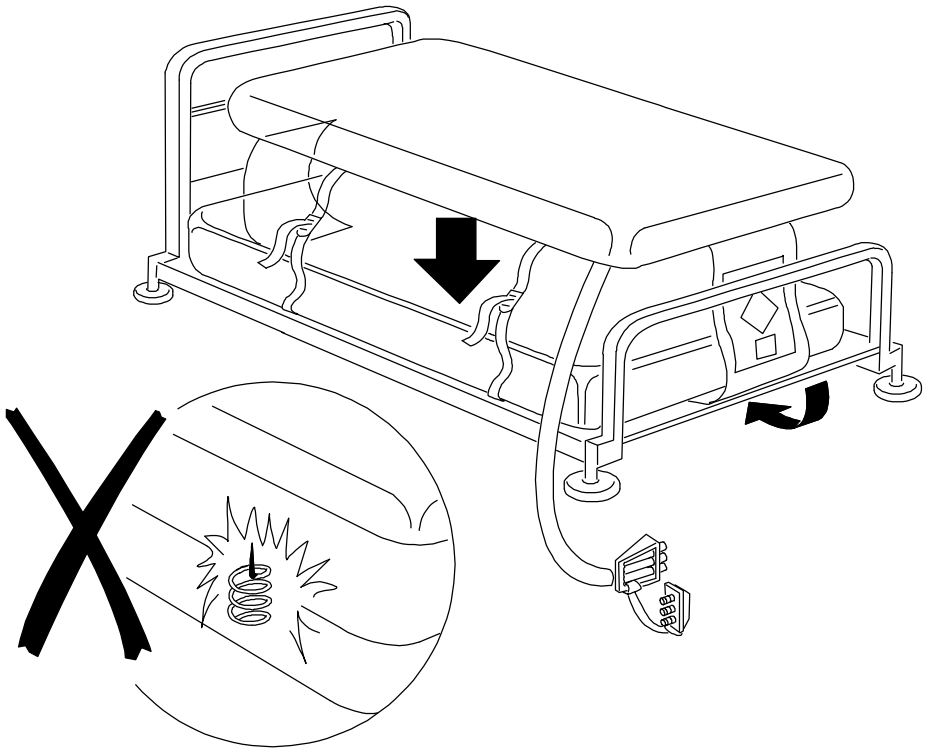
3.1 SETTING UP

CAUTION: Use only on top of the existing bed mattress.

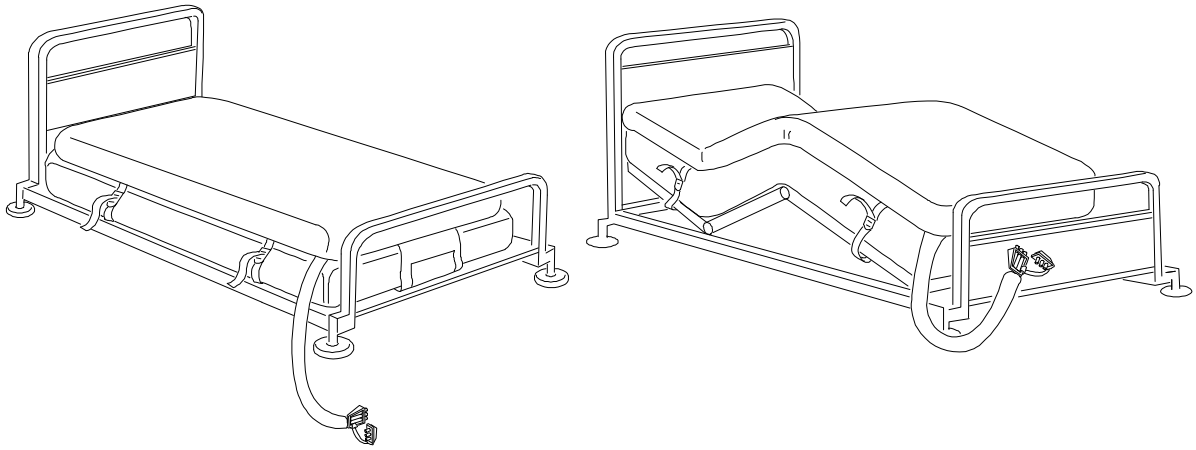
Remove the bedding from the bed.



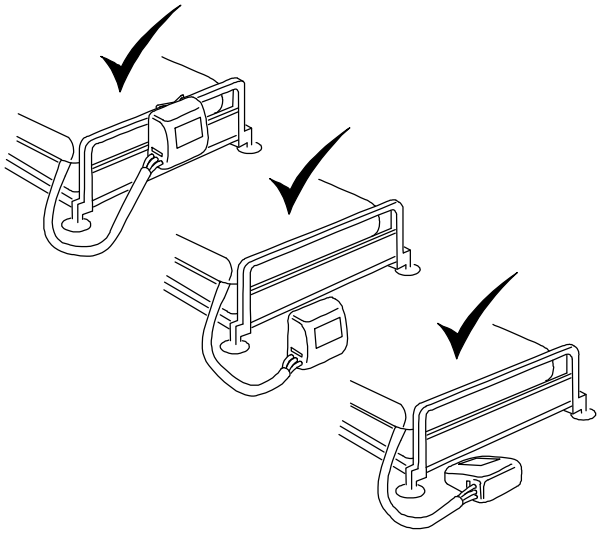
Ensure there are no sharp objects to damage the Overlay. Place the Overlay on top of the bed mattress with the umbilical at the foot end of the bed. Tuck the two end flaps under the bed mattress.



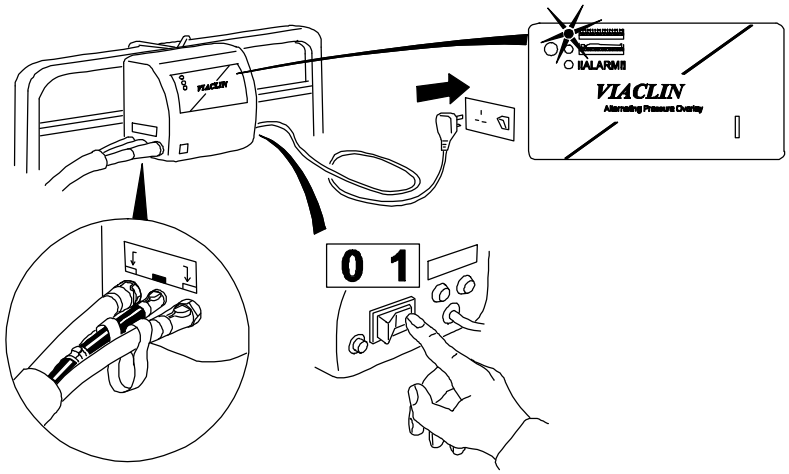
Secure the Overlay straps to the mattress. Do not secure to the bed frame (only secure Overlay straps loosely to the moving parts of the bed frame, (if applicable).



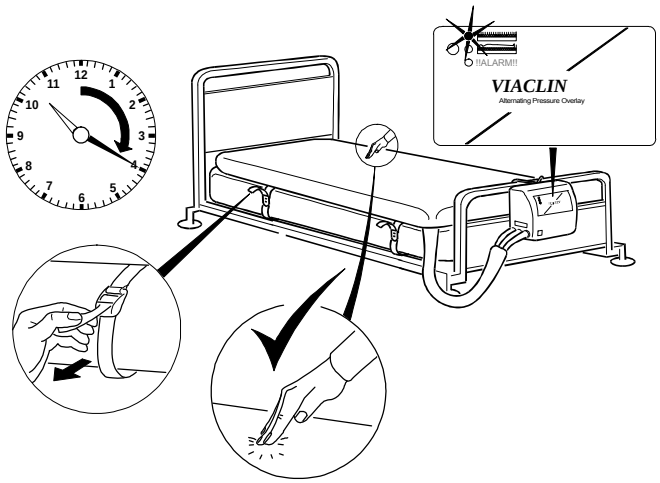
Hang the power unit on the bed or place on the floor.



Connect the three airpipe connectors on to the power unit connectors. Plug the power unit into a suitable mains socket and switch on.

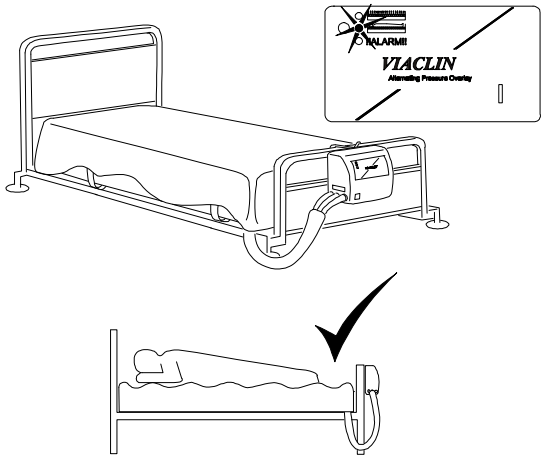


The system will take approximately 20 minutes to reach full inflation pressure, at which time the green NORMAL light will come on and the amber light will extinguish. During this start up phase the red FAULT light may come on and the audible alarm sound, if this occurs turn the power unit off and back on again to reset the alarm.



Once inflated, check the securing straps and tighten if required. For maximum benefit, use only one sheet loosely placed over the mattress. If the sheet is tucked in ensure that it is left loose over the mattress to avoid hammocking.

Once a patient is placed on the mattress the system will adjust automatically to the patient characteristics (weight/position) to provide optimum clinical benefit for each patient. The mattress may feel firm at first until it has adjusted to the individual. Allow approximately 15 minutes for this automatic adjustment to be completed.



If the mattress does not perform as described above, please refer to Section F of this guide 'Alarms and Fault Finding'.

3.2 PROFILING AND KNEE-BREAKING

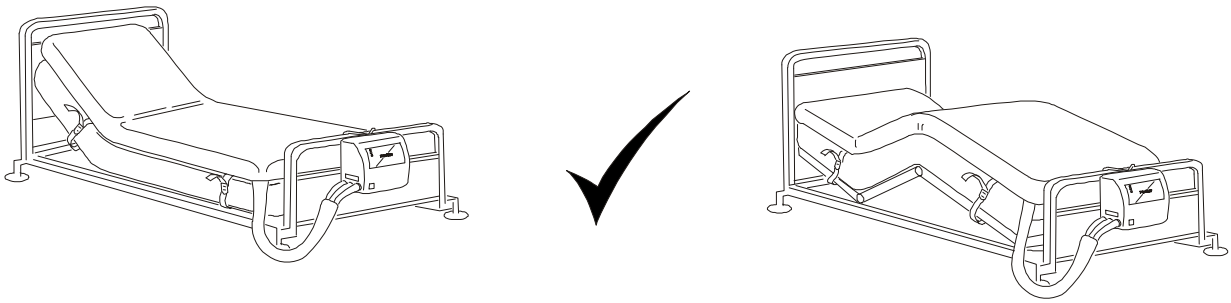
The system may be used while the bed is in the profiled or knee-break position:

1. With the bed in its present position, loosen or release the Overlay securing straps.

2. Change the bed to the required position (profile or knee-break).

3. Re-secure the securing straps.

NOTE: Straps must be attached to moving parts of the bed frame to avoid jamming the bed mechanism or stretching the overlay.



3.3 MOVING THE BED AND POWER CUTS

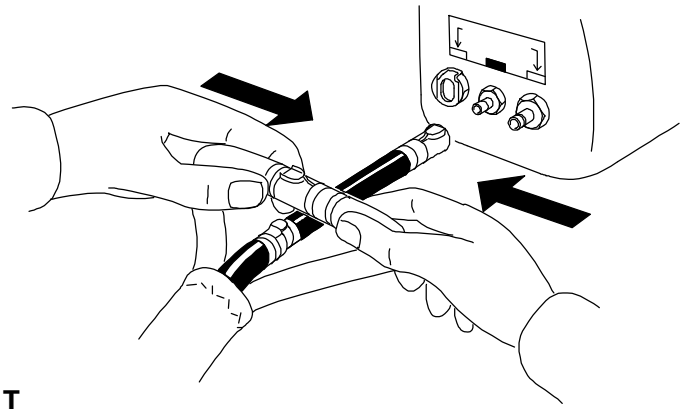
CAUTION: The patient will not receive the benefit of the VIACLIN system while it is disconnected and the power unit is switched off. Therefore the system should be reconnected as soon as possible once the bed has been moved to its new position.

If you need to move the bed with the Mattress Overlay still inflated or in the event of a major mains power failure, carry out the following procedure:

1. **OVERLAY**

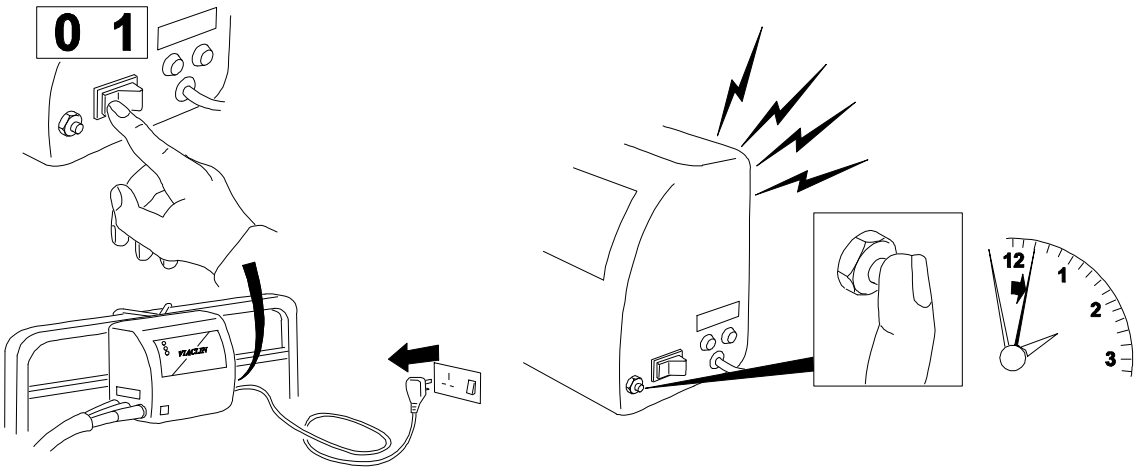
a Disconnect the two red airpipes from the power unit and quickly connect together.

b Disconnect the black airpipe from the power unit.



2. **POWER UNIT**

a Switch off and reset the power-down alarm. Disconnect from the mains.

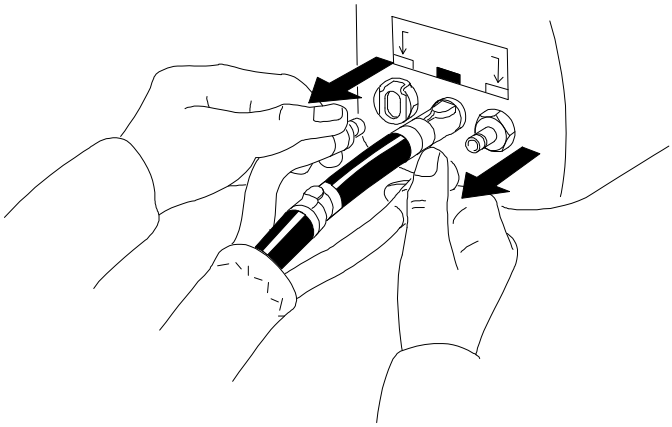


b. The overlay will remain inflated for over 24 hours. The bed can now be moved.

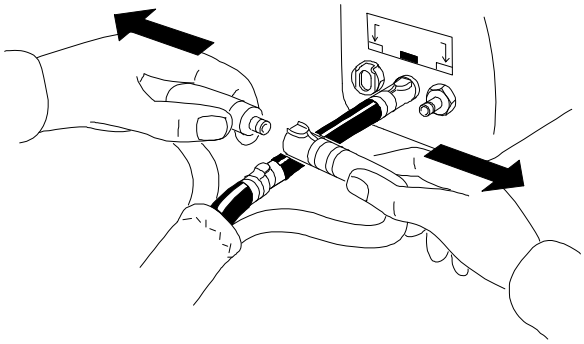
3.4 CPR (CARDIO PULMONARY RESUSCITATION)

In the event of cardiac arrest, disconnect both red airpipes:

1. While system is operating normally, disconnect from the power unit.



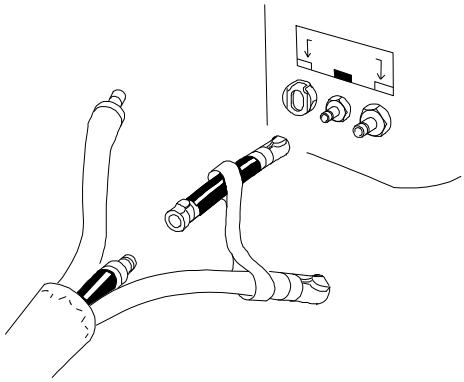
2. While moving the bed, disconnect from each other.



3.5 DEFLATION, REMOVAL, CARRYING AND STORAGE

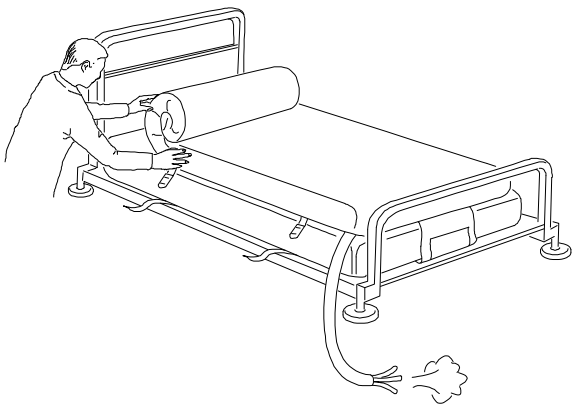
POWER UNIT

1. Switch off.
2. Silence alarm.
3. Disconnect from mains.
4. Disconnect all airpipes.
5. Remove from bed.



OVERLAY

1. Undo all securing straps.
2. Roll up the Overlay.



3.6 ALARMS AND FAULT FINDING

ALARMS

The **VIACLIN** Alternating Pressure Mattress Overlay is equipped with a sophisticated set of alarm functions, these alert the user to the status of the available mains supply and any mattress overlay defect.

In normal conditions with mains power available, the power unit turned on, the mattress overlay fully inflated and alternating, the status light on the power unit front panel will be green.

If at any time the mains power should be removed from the power unit, an audible alarm will be heard. This audible alarm may be cancelled by pressing the alarm reset button for approximately 2 seconds.

If the product develops a defect whilst in use, the status light will turn red and an audible alarm will be heard. This alarm may be cancelled by turning the mains power switch on the side of the power unit to the OFF (O) position, then pressing the alarm reset button for approximately 2 seconds.

FAULT FINDING.

SYMPTOM	ACTION
No lights on power unit	Check power unit is connected to the mains power supply and that the power unit switch is turned to the ON (I) position.
Status light red and alarm sounding, or alarm sounding but no lights	Turn mains switch on power unit OFF, press alarm reset button for approximately 2 seconds until alarm cancels, then switch on again: a. If the status light does not illuminate, mains power to the power unit has been lost. Check that the power unit is connected to the mains supply and that the power unit switch is turned to the ON (I) position b. If the alarm clears then returns after approximately 12 minutes, check air connection between power unit and mattress overlay, ensuring that all air connectors are pushed fully home and that the airpipe is not folded or bent causing air flow to be reduced. Turn mains switch on power unit OFF, press the alarm reset button for approximately 2 seconds until alarm cancels, then switch on again
Mattress overlay not inflating, status light green	Check all air pipes as in (b) above

SECTION 4 – CONSTRUCTION OF PRODUCT

4.1 MAJOR ELEMENTS OF SYSTEM

The product comprises two major elements:

1. Mattress Overlay
2. Power Unit

4.2 MATTRESS OVERLAY

The mattress has 18 transverse cells interconnected, such that there are 2 sets of cells - each being fully inflated then fully deflated.

The cells are chemically bonded to pneumatic tubing, which is formed into a harness terminated by the CPR connector.

The Mattress has a cover which protects the mattress and the bed base from soiling by body fluids, and has a smooth surface finish to facilitate cleaning.

4.3. POWER UNIT

The Power Unit comprises a housing that has a moulded lid, a base and chassis assembly that is fixed together by four socket-headed screws that also secure the hook assembly. When closed the casing is sealed to IP44.

The lid incorporates the following:

1. Mains switch - A double-pole, switch mounted the side wall of the casing.
2. Alarm reset button - Fixed adjacent to the mains switch.
3. Fuses - Two 1 Amp, anti surge fuses are fitted adjacent to the mains switch.
4. Air connectors - There are three connectors to enable connection of the airpipe fitted to the opposite side wall of the casing to that used for the mains switch.
5. Front panel label - The label has a hole for the tri-coloured LED that indicates power supply on (amber), normal running mode (green) and fault (red). The LED is connected to the integral electronic control unit (ECU) via an IDT connector.

The base incorporates the following:

1. Suspension hooks - To enable the unit to fit over the footboard of a bed.

2. Air intake holes - Covered on the inside by a small block of foam that serves as a primary air filter and protects the unit from ingress of dust.

A manufacturer's label is affixed to the rear of the base which bears electrical rating information and the serial number of the unit.

The interior of the base carries a mild steel chassis that is secured to the casing front by two screws.

The chassis incorporates the following:

Compressor	ECU
Rotorvalve	Silencer / Accumulator
Pressure Switch	Restrictor Block
Alarm Buzzer	

4.4 TECHNICAL DETAILS

Cycle Control	Purpose designed distributor valve supplying operating air to the inflatable cells			
Cycle Time	12 minutes			
Supply Voltage	220/240Vac 50Hz			
Power Rating	40VA			
Fuse Rating	Power Unit:	1A Antisurge (x2)		
	Mains Plug:	3A		
Noise Level	NC30			
Nominal Dimensions	Mattress (Inflated)		Mattress (narrow)	
	Length:	1900mm	Length	1900mm
	Width:	880mm	Width	800mm
	Height:	130mm	Height	130mm
	Weight:	3.8kg	Weight	3.5kg
	Power Unit			
	Height:	203mm		
	Width:	220mm		
	Depth:	115mm (max)		
	Weight:	2.3kg		
Electrical Safety	Conforms to BSEN 60601-1			
Classification	Class 1, Type B			
Mode of Operation	Continuous			
Symbols		Alternating Current		
		Mains Switch - 1 (On) Power connected to the mains supply 0 (Off) Power disconnected from mains supply		
		Type B		
Environment (Usage and Storage)	Air Humidity:	30% to 75%		
	Ambient Temperature:	0ºC (32ºF) to 40ºC (104ºF)		
EMC	This equipment complies with EMC requirements. If effects are noticed the affected equipment should be moved apart.			

SECTION 5 – INFECTION CONTROL/CLEANING

5.1 INFECTION CONTROL

Infection Control and routine cleaning must be carried out in accordance with your local Infection Control Policy.

5.2 CLEANING GUIDELINES

WARNING: ENSURE THE POWER UNIT IS DISCONNECTED FROM THE MAINS ELECTRICITY SUPPLY BEFORE CLEANING.

CAUTION Do not immerse the power unit in water.

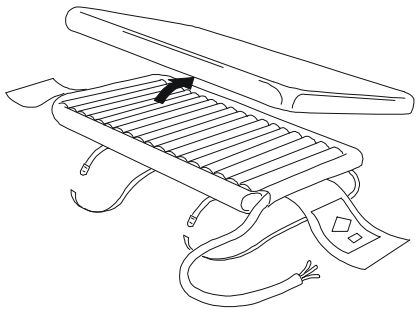
Do not high temperature autoclave, or use Phenolic based products for cleaning.

It is recommended the system is cleaned between users or approximately every 2 weeks if in constant use.

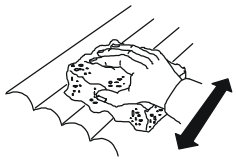
Overlay and Cover

Wipe down with warm water containing detergent, dry thoroughly before use.
The cover may also be machine washed (80° C).
Swab with a solution of Sodium Hypochlorite or similar (1,000 to 10,000ppm available chlorine), dry thoroughly before use.
It is recommended that the system is cleaned regularly and after each patient use.

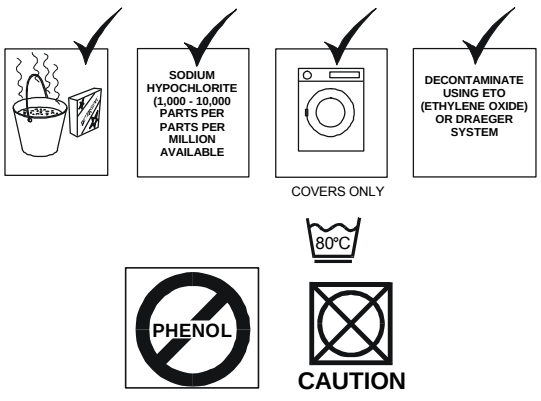
In many cases it will only be necessary to remove the overlay cover for cleaning. Where there is obvious soiling, a full cleaning or sterilization procedure will have to be carried out.



Ensure overlay and cover are fully dry before use



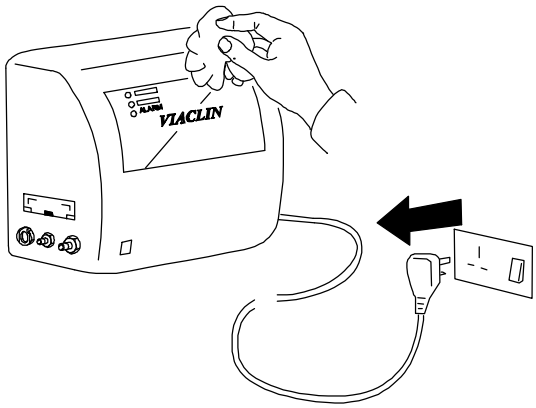
CAUTION:


SODIUM HYPOCHLORITE (1,000 - 10,000 PARTS PER PARTS PER MILLION AVAILABLE
DECONTAMINATE USING ETO (ETHYLENE OXIDE) OR DRAEGER SYSTEM
COVERS ONLY
80°C
PHENOL
CAUTION

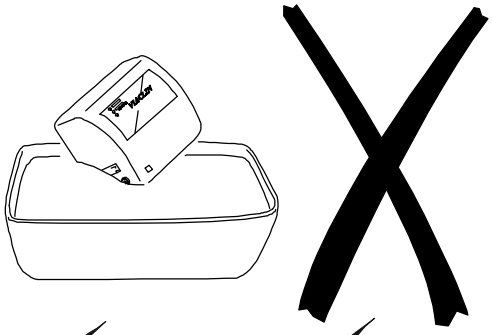
Power Unit

Wipe down with warm water containing detergent, dry thoroughly before use.

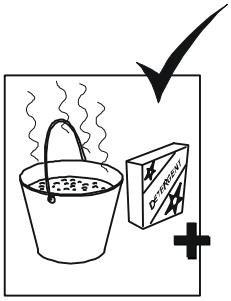
Wipe down with a solution of Sodium Hypochlorite or similar (up to 10,000ppm available chlorine), dry thoroughly before use



CAUTION



Cleaning procedure



SODIUM HYPOCHLORITE (1,000 - 10,000 PARTS PER MILLION AVAILABLE CHLORINE (Cl))

DECONTAMINATE USING ETO (ETHYENE OXIDE) OR DRAEGER SYSTEM

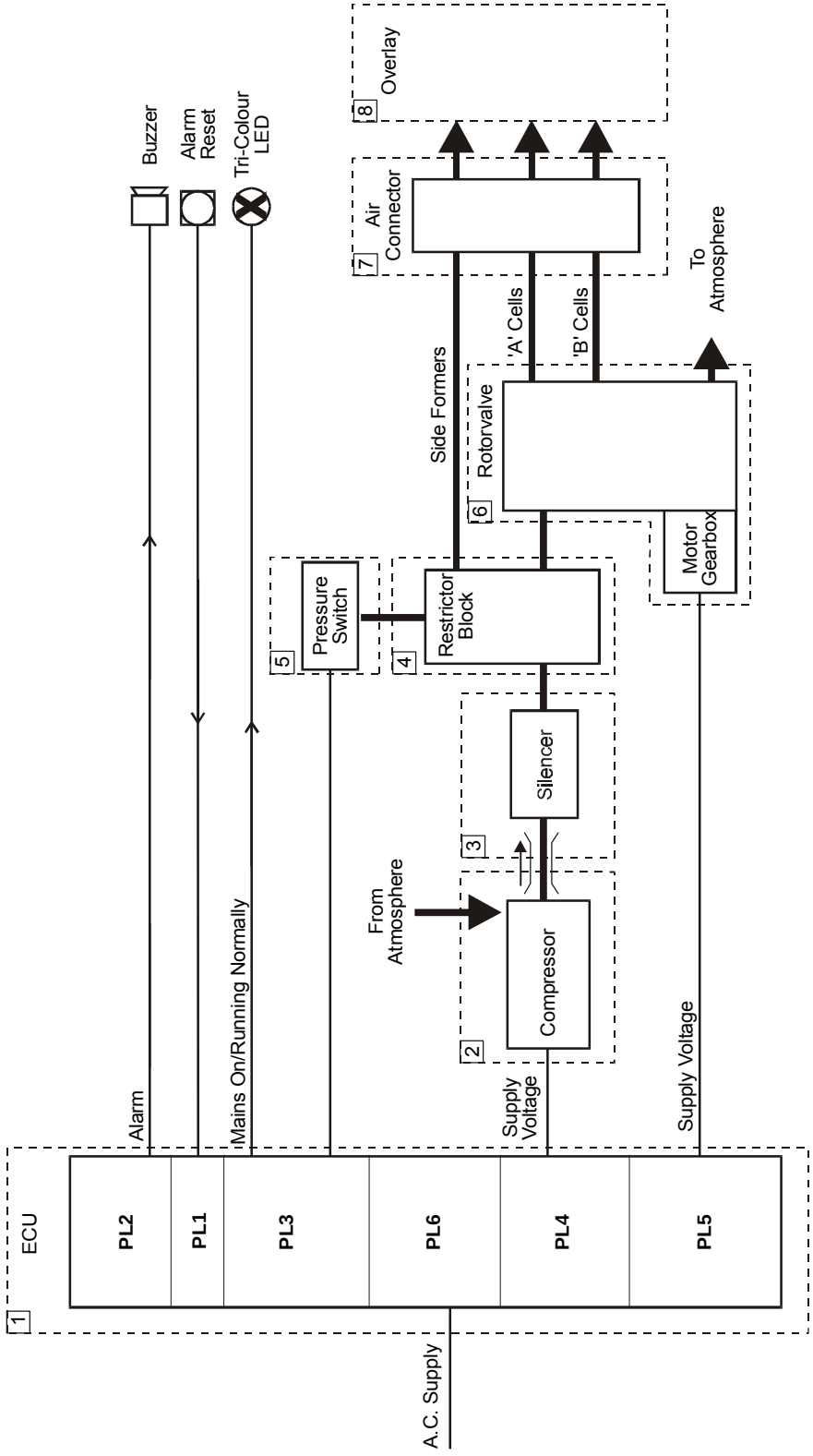
CAUTION:

CAUTION

The overlay mattress, overlay cover and power unit may also be decontaminated by using ETO (Ethylene Oxide) or the Draeger method.

SECTION 6 – EQUIPMENT MAINTENANCE

The item numbers shown at the top left hand corner of the box drawn around each item are used in the Maintenance and Parts sections for identification purposes, i.e. Item 1 in each section is the ECU, Item 2 is the compressor, etc.



Notes:

i. It is recommended that the Viaclin system is part of a planned preventative maintenance scheme.
ii. To prevent damage, normal electrostatic control procedures must be observed when working on the Power Unit.
iii. Electrical safety checks must be carried out on completion of any routine maintenance or workshop repairs.
iv. Details of tubing in the power unit is shown in Section 8 'TUBING DETAILS – SCHEMATIC'

Power Unit – General

ECU Conn	N/A
Maint/Repair	1. Check the security of the wiring and tightness of screws and integrity of component mountings - rectify as necessary. 2. Check pneumatic tubing for hardening or cracking and replace as necessary. 3. Switch on the electrical power supply. 4. Check all pneumatic connections for air leaks and rectify as necessary. 5. Lubricate spigot outlets sparingly with appropriate grease.
Test/Set-Up	Carry out an overall operation test
Test Eqpt	N/A

Item 1 – Electronic Control Unit

The microprocessor controlled ECU is mounted on the chassis.

The ECU has a rechargeable battery that provides power for the ECU and alarm buzzer in the event of power failure (it does not provide reserve power for the compressor or rotorvalve). The battery can only be recharged by the ECU.

Control of the compressor is by the ECU, in response to signals provided by the pressure switch which continually monitors system pressures.

The ECU also controls the status indicator on the front panel and the alarm buzzer and responds to activation of the alarm-reset pushbutton.

ECU Conn	N/A
Maint/Repair	The battery is the only maintainer serviceable item; otherwise the ECU is repair by replacement. Note: To prevent damage, normal static control procedures must be observed when working on the PMU. Battery replacement (replacement only needed if battery is charged and power down alarm fails) 1. Unsolder battery from ECU – note orientation of battery. 2. Solder new battery onto ECU, ensuring it is in the same orientation as the old battery.
Test/Set-Up	Testing of the ECU is carried out as part of the system test
Test Eqpt	N/A

Item 2 – Compressor

One Air Compressor is fitted, which takes air from atmosphere within the power unit and delivers air to the overlay bottom deck via the silencer, restrictor block, airpipe and to the top deck via the silencer, restrictor block rotorvalve and airpipe

The Compressor has rubber-mounting feet attached by screws and nuts to an aluminium baseplate, a 4-way IDT connector for connection to the ECU, a spigot outlet over which 8mm-diameter silicone tubing is push-fitted to enable pneumatic connection to the check valve, from which tubing connects to the silencer.

ECU Conn	PL4
Maint/Repair	Maintenance of the compressor consists of replacing the filter: 1. Remove the filter cover from the end of the compressor, remove the filter. 2. Clean the filter housing surfaces and the disk. 3. Fit a new filter and replace the cover.
Test/Set-Up	**Carry out compressor electrical tests:** 1. Disconnect tubing from the compressor (if fitted). 2. Connect the compressor to the appropriate connector(s) on the test set (TE5315). 3. Connect the test set to mains and switch on. No-Load Test Check compressor runs with no excess vibration or noise - if there is a defect the 1.6a fuse may blow. On-Load Test This test is carried out at the same time as the flow rate test. Carry out a compressor flow rate test with TE5315 connected as for the no-load test - if there is a Defect the 1.6a fuse may blow. **Carry out a flow rate test on the compressor:** Note: Ensure the compressor is in its 'HOT' state prior to carrying out the test: Start Service Mode and press the Alarm Reset button once, this will start the compressor. Let the compressor run for 30 minutes to get to the 'Hot' state. If the system has been running for at least 1 hour prior to starting Service Mode, the compressor is assumed to be in the 'Hot' state and do not need to be run for 30 minutes. 1. Remove the tubing from the compressor and connect the test equipment (TE4540) in its place. Note: Ensure Test Equipment is connected to the pressure outlet of the compressor, not the vacuum side. 2. Switch the power unit On. Adjust the aneroid sphyg to read 100mmhg. 3. Check the flow rate on the flow meter reads not less than 5.5 ltr/min. If using test equipment other than TE4540, the flow rate should read 7 ltr/min or greater. 4. Switch off, remove test equipment; reconnect the tubing to the compressor. Notes: i. If using a 1-12 ltr glass tubed flow meter, read the value from the top of the float. ii. If using a plastic bodied flow meter, read the value from the centre of the float.
Test Eqpt	TE4540, TE5315

Item 3 - Silencer

The silencer smoothes pressure fluctuations in the pneumatic system and absorbs any noise being carried in the airflow from the compressor.

It is fitted into a recess in the chassis and held in place by the casing.

Spigot outlets from the silencer have 8mm-diameter silicone tubing push-fitted to enable pneumatic connection to the compressor and restrictor block.

ECU Conn	N/A
Maint/Repair	1. There are no maintenance actions to be carried out on the silencer. Repair is by replacement 2. It is recommended the silencer is replaced annually
Test/Set-Up	There are no tests to be carried out on the silencer.
Test Eqpt	N/A

Item 4 – Restrictor Block

The restrictor block enables airflow to and from the following:

Silencer
Pressure Switch
Air Connector (for side formers only)
Rotorvalve

ECU Conn	N/A
Maint/Repair	Remove all tubing from restrictor block and ensure all spigots are clear of obstructions.
Test/Set-Up	There are no tests to be carried out on the restrictor block.
Test Eqpt	N/A

Item 5 – Pressure Switch

The plastic bodied pressure switch is an integral part of the rotorvalve unit. The pressure at which the switch trips can be adjusted and set by a means of a knurled nut.

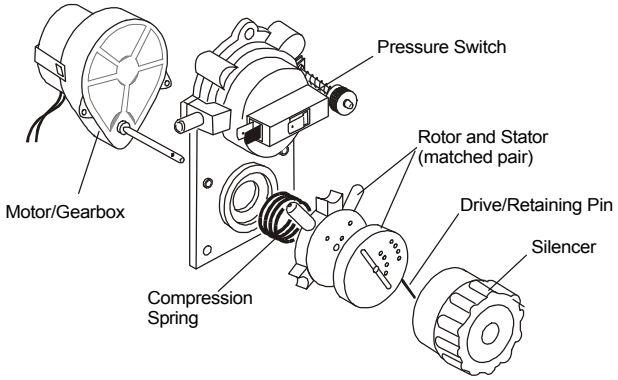
The pressure switch is a single pole electrical switch, actuated via a diaphragm that responds to the system air pressure.

Electrical connections to the ECU are via an IDT connector.

ECU Conn	PL3
Maint/Repair	The only replaceable part of the pressure switch is the micro switch. 1. Disconnect electrical connections and tubing, then remove the rotorvalve assembly from the power unit 2. Undo the two screws securing the motor/gearbox to the base plate and swivel the motor through 180° to allow access to the four screws securing the pressure switch cover to the base plate. 3. Remove the thumbscrew, plastic collar and spring from the pressure switch pillar, noting the orientation of the collar. 4. Remove the screws securing the pressure switch cover and remove the cover and actuating plate, taking care not to disturb the pressure sac. Remove the actuating plate from the cover. 5. Remove the rubber sleeve from the top, front microswitch connector. Using a 1.5mm Allen key, remove the two grub screws securing the micro switch to the cover and remove the micro switch. 6. Replace the microswitch and secure in place using the grub screws removed at (5). Replace the rubber sleeve on the top front connector. 7. Refit the actuating plate into the cover, ensuring the flat side is away from the micro switch. 8. Taking care not to disturb the pressure sac, replace the pressure switch cover ensuring the actuating plate fits over the pillar. Secure the cover using the screws removed at (4). 9. Replace the spring, plastic collar and thumbscrew on the pillar ensuring the collar is oriented as noted in (3). 10. Swivel the motor/gearbox through 180° and secure in place using the screws removed at (2). 11. Refit the rotorvalve assembly in the power unit. Reconnect the electrical connections and tubing. 12. Carry out a pressure test.
Test/Set-Up	**Carry out pressure test** 1 Fit an aneroid sphyg (TE004) to each line of test connector (TE4827) 2 Fit test connector between power unit and airpipe. 3 Set the pressure switch to attain cell pressures of 40-50mmHg. Ensure the pressure switch operates at 40mmHg (nominal) on the fall.
Test Eqpt	TE4827, TE004 (x3)

Item 6 – Rotorvalve

The rotorvalve is a rotary pneumatic valve that enables airways to open and close as the rotor turns, thereby enabling air to be fed to and from the overlay. It is driven by an integral motor/gearbox.



ECU1 Conn	PL5
Maint/Repair	**Remove Rotorvalve Assembly** 1. Disconnect the tubing from the restrictor block and airpipe connectors. 2. Disconnect the motor lead from ECU PL5. 3. Undo the 3 screws securing the Rotorvalve to the chassis. Remove the rotorvalve assembly complete. 4. Replacement is the reverse of the above. **Replace rotorvalve rotor and stator** 1. Remove silencer from rotorvalve 2. Axially depress the Rotorvalve rotor and slide the rotor drive/retaining pin along the slot in the top face of the Rotor, until the pin is clear of the gearbox drive shaft. The rotor, stator and compression spring can then be slid axially off the drive shaft. 3. Fit the compression spring, stator and rotor, in order, on to the drive shaft. Depress the rotor, aligning the slot in its top face with the transverse hole in the drive shaft. 4 Reinsert the drive/retaining pin through the drive shaft and release pressure on rotor. 5. Refit silencer. **Replace Motor/Gearbox** 1. Remove rotorvalve (see - replace rotorvalve rotor and stator. Paras 1 and 2) 2. Undo two screws securing the motor/gearbox to pressure switch base plate and remove motor/gearbox. 3. Fit new motor/gearbox. 4. Re-fit rotorvalve (see - replace rotorvalve rotor and stator. Paras 3 to 5) 5. Test Rotorvalve operation as detailed below. continued ….

Item 6 – Rotorvalve (continued)

Maint/Repair (continued)	**Rotorvalve Maintenance/Repair** 1. Check the rotorvalve airways are clean and clear of obstruction - wash the rotor and stator in mild detergent solution. 2. Check the rotor and stator faces for signs of wear and tear or pitting. Replace if necessary Note: Rotor and stator must be replaced as a matched pair. 3. Replace silencer filter
Test/Set-up	1. Switch on the power unit and ensure that the Rotorvalve is cycling (the tone of air escaping from the outlet tubes will change regularly if all is well). 2. Ensure the rotor, motor/gear box is running smoothly. If the rotor is noisy, a major overhaul is required. 3. Check Rotorvalve rotation is correct - one full cycle of mattress inflation = 12 minutes ± 0.5 min.
Test Eqpt	N/A

Item 7 – Air Connectors

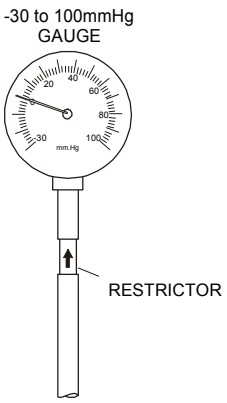
ECU Conn	N/A
Maint/Repair	1. Check connectors visually for obvious signs of wear/specific damage. 2. Check locking mechanisms 3. Lubricate the connector spigots sparingly with an appropriate grease
Test/Set-Up	Connect the airpipe to the power unit and run the system, check for any air leaks. (this check should be carried out at the same time as the mattress check)
Test Eqpt	N/A

Item 8 – Overlay

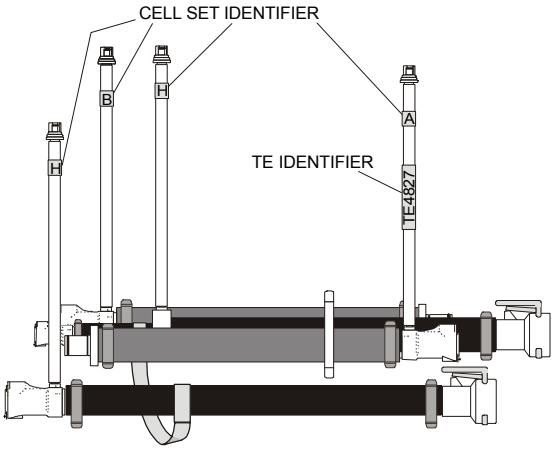
ECU Conn	N/A
Maint/Repair	1. Check visually for obvious signs of wear/specific damage. 2. Carry out airpipe connector checks as for Item 7 Repair of the top deck is by the use of replacement cells: 1. To implant a cell insert, first carefully remove the connector (Roberts valve) from the cell by cutting around the connector base, leaving a circular hole. Take care not to cut through into the bottom layer of the cell when removing the connector. 2. Roll the insert into a long thin tube and pass through the hole into the defective cell, with its Roberts valve protruding through the hole. 3. Gently inflate the insert and position it carefully within the cell. 4. Secure the Roberts valve of the cell insert to the cell wall using a washer of mattress material fitted over the valve and glued to the cell wall using UPVC solvent cement. Repair of the bottom deck is by replacement.
Test/Set-Up	Connect the overlay to the power unit and run the system, check for any air leaks. (this check should be carried out at the same time as the airpipe check)
Test Eqpt	N/A

SECTION 7 – TEST EQUIPMENT

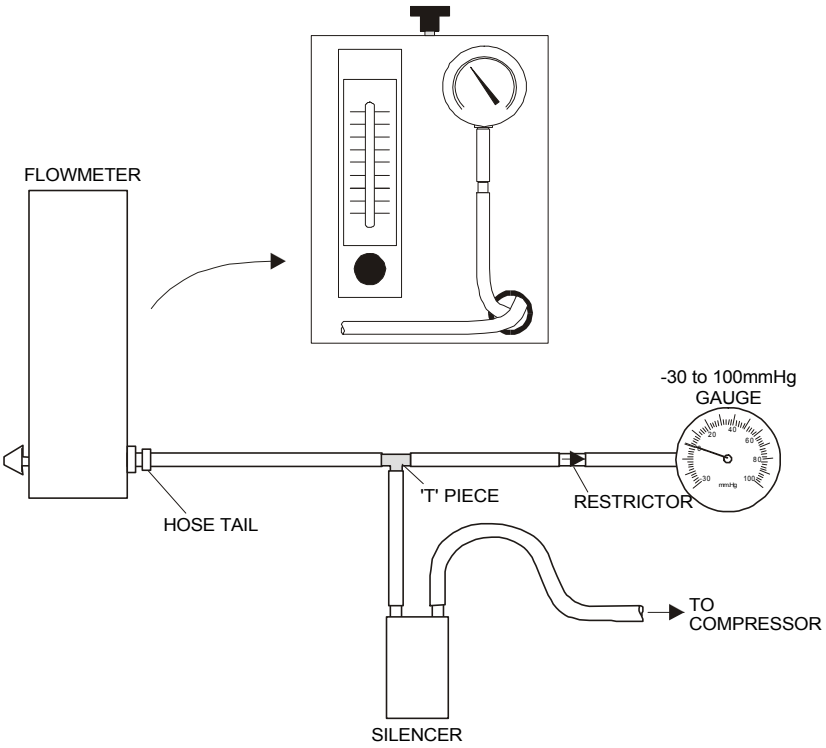
TE004



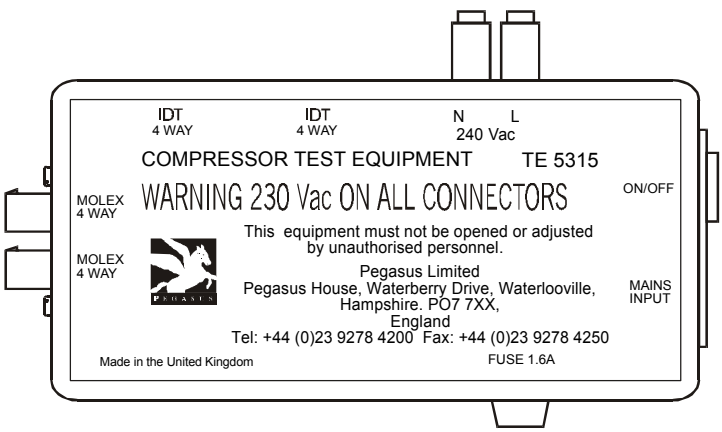
TE4827



TE4540



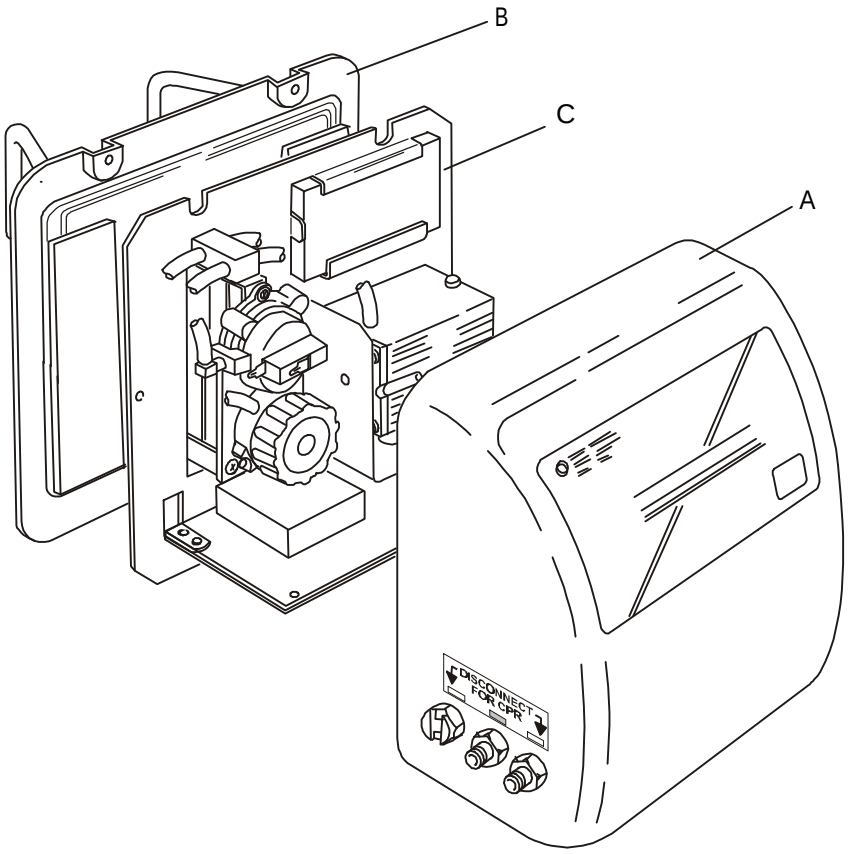
TE5315



SECTION 8 – PARTS LIST

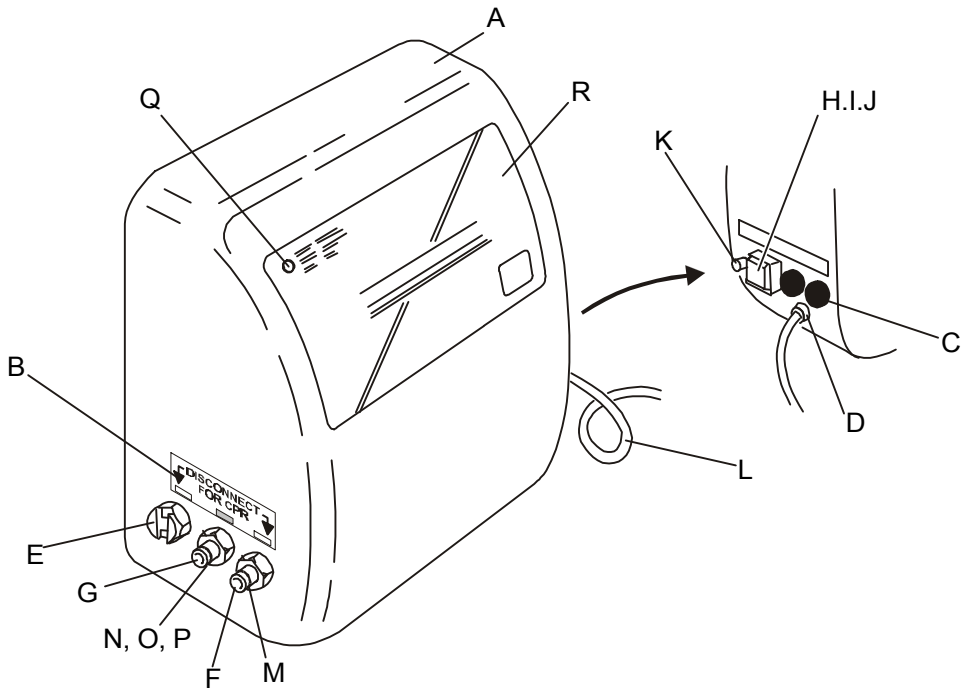
1. POWER UNIT ASSEMBLY – SA200/6

NOTE: EXISTING 2501 OR 2502 THAT REQUIRE A REPLACEMENT POWERUNIT WILL BE REPLACED BY A 2503 POWER UNIT (SA242) AND AN APPROPRIATE ADAPTER (REF: MOD KIT MOD14831



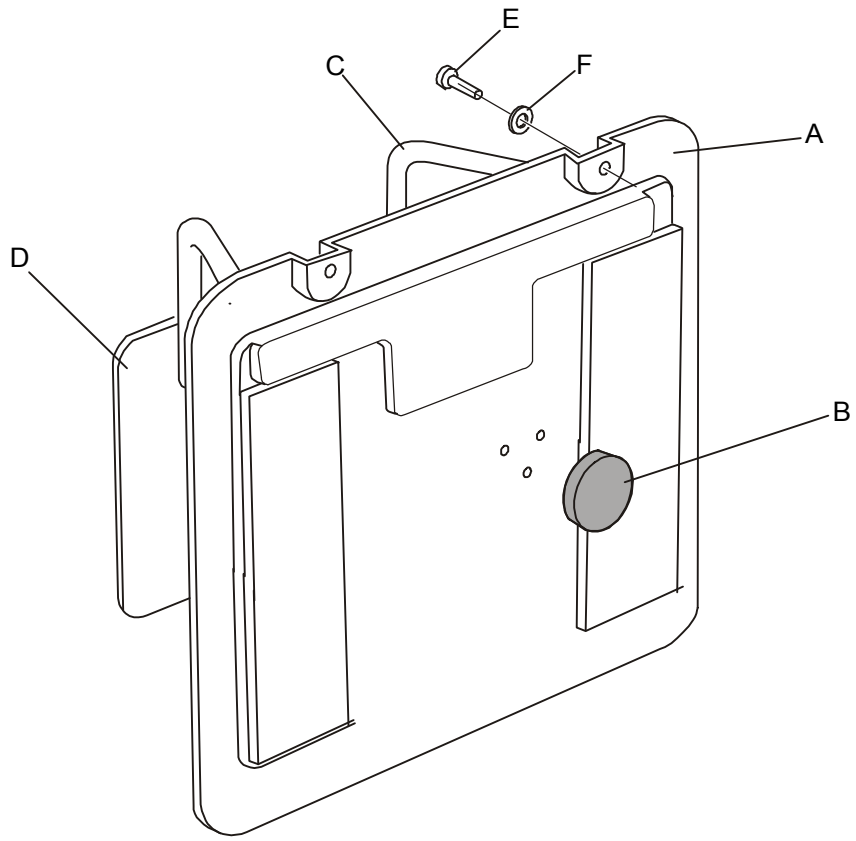
ITEM	DESCRIPTION	PART No	QTY
A	Front Cover Assembly	SA226/5	1
B	Back Cover Assembly	SA205	1
C	Chassis Assembly	NOT SPARED	1

FRONT COVER ASSEMBLY



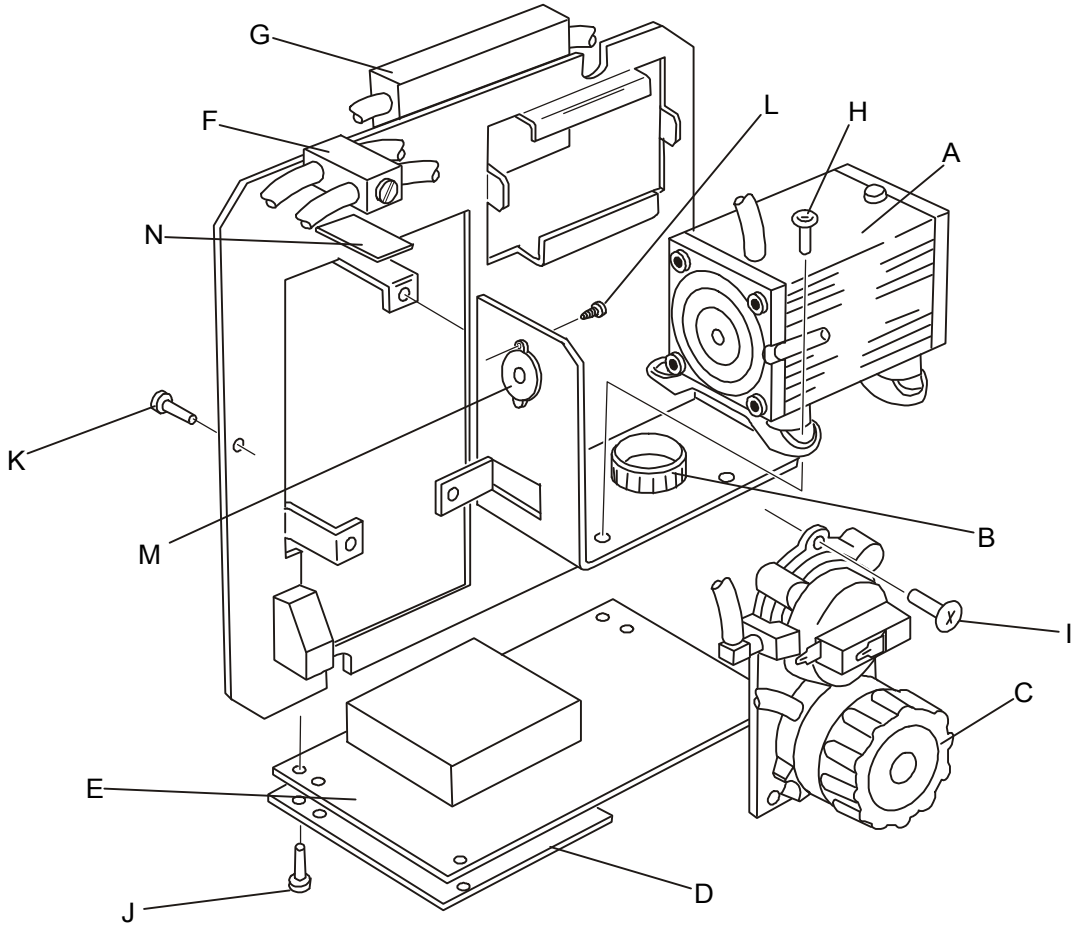
ITEM	DESCRIPTION	PART No	QTY
A	Front Cover Assembly	SA226/5	1
B	Label, CPR/Reanimation	LAB5476	1
C	Fuse 1A Anti-Surge	MSE1185	2
D	Strain Relief Bush	MSM1819	1
E	Female Connector	MSM4130	1
F	Male Connector Large	MSM4131	1
G	Male Connector Small	MSM4524	1
H	Mains Switch	CON4549	1
I	Splashproof Switch Cover	MSM4835	1
J	Switch Bezel	MSM4836	1
K	Reset Pushbutton (c/w Loom)	MSM5362	1
L	Mains Cable Assembly	SA228	1
M	'O' Ring (large male connector)	MSM4217	1
N	'O' Ring (small male connector)	MSM4666	1
O	Stepped Washer (outside)	MEC4518	1
P	Washer M12, Nylon (inside)	MSM4519	1
Q	LED Loom Assembly	MSM5357	1
R	Label Front	LAB4387	1
NOT SHOWN	Label 'DO NOT SWITCH OFF' (mains plug)	LAB427	1

REAR COVER ASSEMBLY



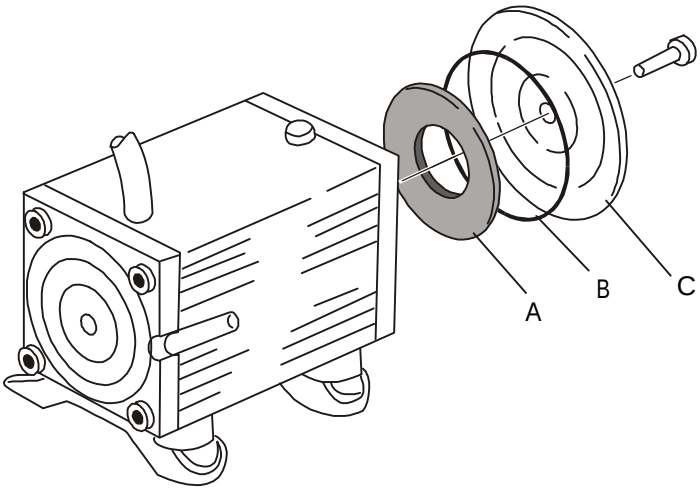
ITEM	DESCRIPTION	PART No	QTY
A	Rear Cover	SA205	1
B	Filter	MEC1605	1
C	Vinyl Cover for Hooks	MSM4127	2
D	Rear Label	LAB5449	1
E	Screw	SCR452	4
F	Washer	WAS361	4

CHASSIS ASSEMBLY



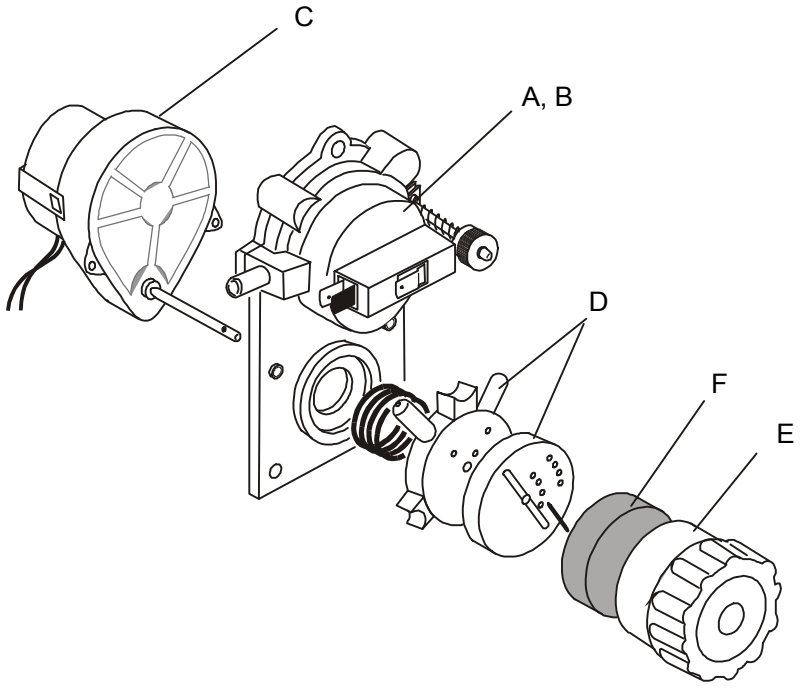
ITEM	DESCRIPTION	PART No	QTY
A	Compressor Assembly	SA213	1
B	Nylon Bush	MSM4113	1
C	Rotorvalve Assembly	RV801	1
D	ECU Insulating Sheet	MEC4173	1
E	ECU	SA220/1	1
F	Restrictor Block Assembly	SA207	1
G	Silencer Assembly	SA208	1
H	Compressor Securing Screw	SCR4873	4
I	Rotorvalve Assembly Securing Screw	SCR4178	3
J	ECU Securing Screw	SCR466	4
K	Chassis Securing Screw	SCR467	2
L	Buzzer Securing Screw	SCR466	1
M	Buzzer (c/w loom)	MSM5356	1
N	Double-Sided Tape	MSM4497	1 roll

COMPRESSOR ASSEMBLY



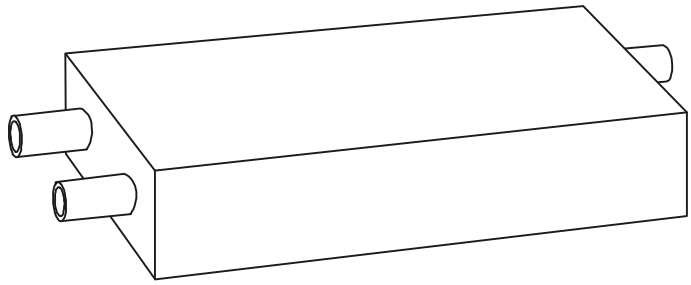
ITEM	DESCRIPTION	PART No	QTY
A	Filter	MEC3024	1
B	'O' Ring	MSM3073	1
C	Filter Cover (c/w 'O' Ring)	MLD3075	1

ROTORVALVE ASSEMBLY



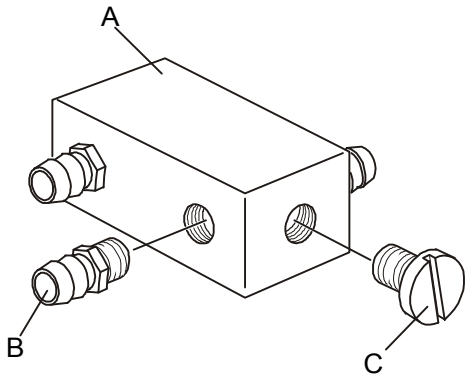
ITEM	DESCRIPTION	PART No	QTY
A	Pressure Switch	MEC5087	1
B	Pressure Switch Microswitch	MSE4450	1
C	Motor/Gearbox	MOT5561	1
D	Rotorvalve Rotor and Stator (matched pair)	RV5086	1
E	Silencer (c/w foam insert)	MLD1650	1
F	Foam Insert	MEC1605	1

SILENCER ASSEMBLY



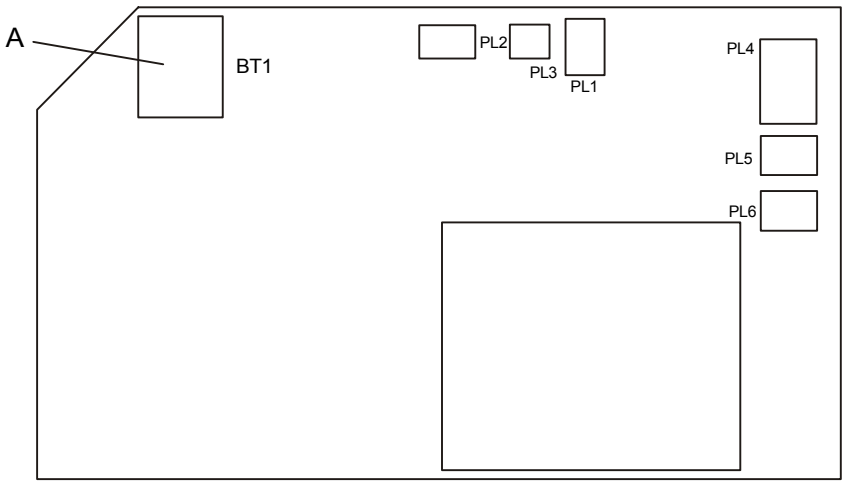
ITEM	DESCRIPTION	PART No	QTY
	Silencer Box	MLD209	1

RESTRICTOR BLOCK ASSEMBLY



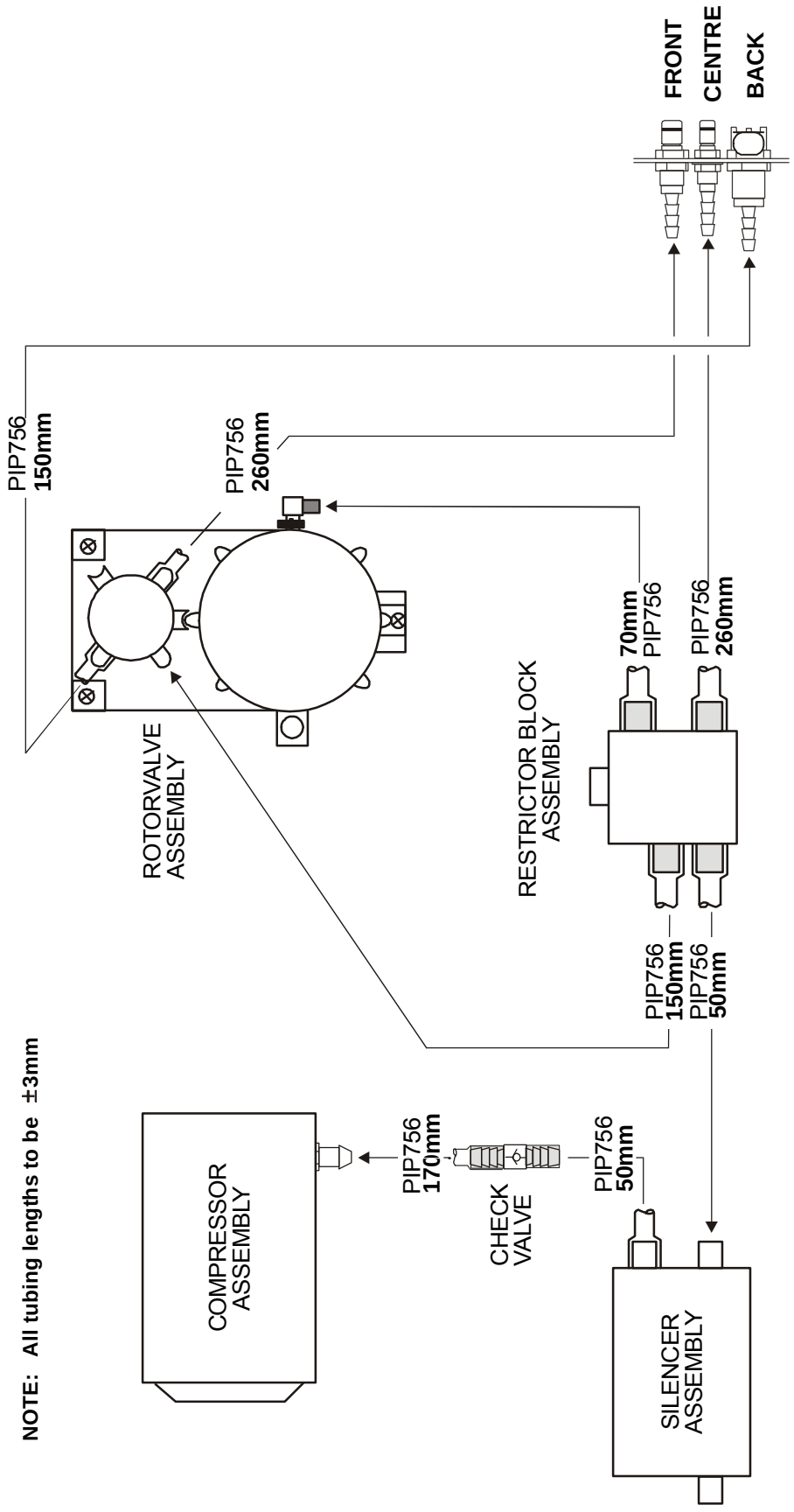
ITEM	DESCRIPTION	PART No	QTY
A	Restrictor Block	MEC817	1
B	Spigot	MEC490	4
C	Blanking Plug	MSM492	1

ECU

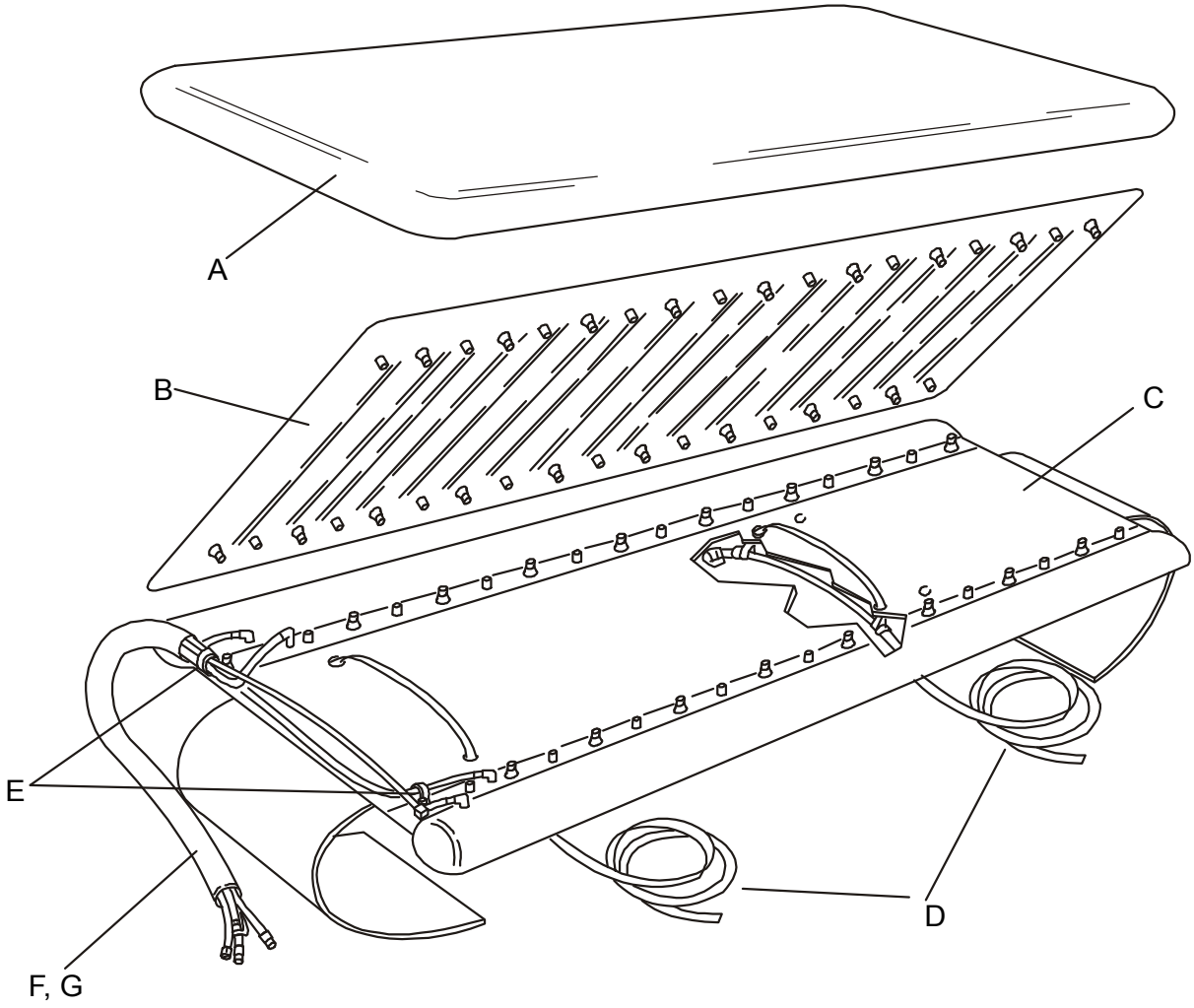


ITEM	DESCRIPTION	PART No	QTY
A	Battery	MSE1760	1

POWER UNIT TUBING DETAILS – SCHEMATIC



2. MATTRESS OVERLAY



880mm

ITEM	DESCRIPTION	PART No	QTY
	Overlay Assembly	SA201	
A	Cover	SA217	1
B	Overlay Top	MAT4124	1
C	Overlay Bottom	MAT4125	1
D	Strap Set	MAT4169	1
E	Locating Loop	MAT4190	2
F	Airpipe Assembly	SA202	1
G	Airpipe Cover	SA218/2	1

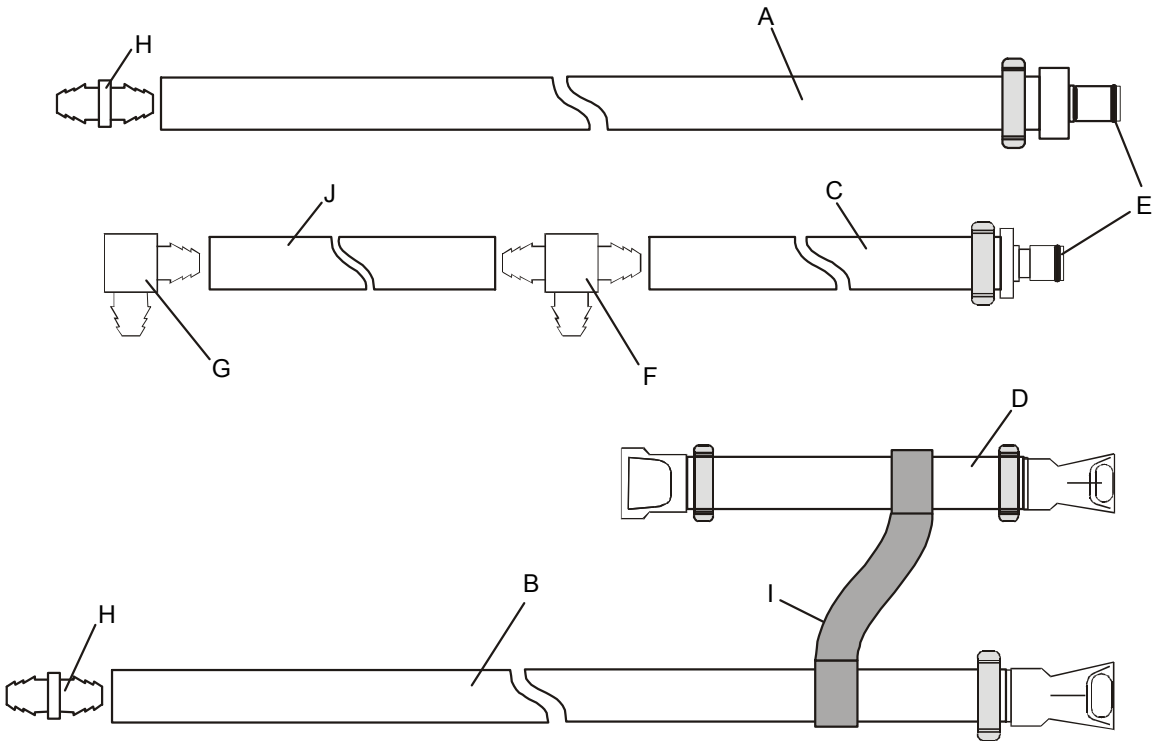
800mm

ITEM	DESCRIPTION	PART No	QTY
	Overlay Assembly	SA201/3	
A	Cover 800mm	SA217/3	1
B	Overlay Top 800mm	MAT5475	1
C	Overlay Bottom 800mm	MAT5477	1
D	Strap Set 800mm	MAT5478	1
E	Locating Loop 800mm	MAT4190	2
F	Airpipe Assembly 800mm	SA202/1	1
G	Airpipe Cover	SA218/2	1

680mm

ITEM	DESCRIPTION	PART No	QTY
	Overlay Assembly	SA201/4	
A	Cover	SA217/4	1
B	Overlay Top	MAT5505	1
C	Overlay Bottom	MAT5506	1
D	Strap Set	MAT5507	1
E	Locating Loop	MAT4190	2
F	Airpipe Assembly	SA202/2	1
G	Airpipe Cover	SA218/2	1

AIRPIPE ASSEMBLY



800mm

ITEM	DESCRIPTION	PART No	QTY
A	Red Airpipe (male connector)	SA202/3	1
B	Red Airpipe (female connector)	SA202/4	1
C	Black Airpipe (male connector)	SA202/5	1
D	Black Airpipe (female/female connectors)	SA202/6	1
E	'O' Ring (male connectors)	MSM4217	2
F	'T' Connector	MSM744	1
G	Elbow Connector	MSM745	1
H	Straight Connector	MSM748	2
I	Retaining Strap	MAT4180	1
J	Tubing PVC Black 3/8 I/D	PIP1959	640mm

800mm

ITEM	DESCRIPTION	PART No	QTY
A	Red Airpipe (male connector)	SA202/3	1
B	Red Airpipe (female connector)	SA202/4	1
C	Black Airpipe (male connector)	SA202/5	1
D	Black Airpipe (female/female connectors)	SA202/6	1
E	'O' Ring (male connectors)	MSM4217	2
F	'T' Connector	MSM744	1
G	Elbow Connector	MSM745	1
H	Straight Connector	MSM748	2
I	Retaining Strap	MAT4180	1
J	Tubing PVC Black 3/8 I/D	PIP1959	560mm

680mm

ITEM	DESCRIPTION	PART No	QTY
A	Red Airpipe (male connector)	SA202/3	1
B	Red Airpipe (female connector)	SA202/4	1
C	Black Airpipe (male connector)	SA202/5	1
D	Black Airpipe (female/female connectors)	SA202/6	1
E	'O' Ring (male connectors)	MSM4217	2
F	'T' Connector	MSM744	1
G	Elbow Connector	MSM745	1
H	Straight Connector	MSM748	2
I	Retaining Strap	MAT4180	1
J	Tubing PVC Black 3/8 I/D	PIP1959	445mm

MISCELLANEOUS

ITEM	DESCRIPTION	PART No	QTY
	Check Valve Assembly	SA238	1
	Check Valve	MSM5031	1
	Tubing Silicone 5x8mm	PIP756	as required
	Tubing PU Clear 1/8x1/4	PIP788	as required
	Tie-Wrap Base	MSM347	as required
	Tie-Wrap, small	MSM550	as required
	Tape Marine PVC Black (for strapping the airpipes together)	MSM4191	as required
	Loom, Mains/ECU	MSM5359	1
	Loom, Reset Button/Earth	MSM5360	1
	Loom, LED/Earth	MSM5361	1
	Loom, Mains/Fuses	MSM5363	1
	Overlay Carry Bag	MAT5404	as required

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Publication Reference: LFT5508 Issue 3

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